The afterglow of a sonoluminescing bubble. Thomas J. Matula* (Applied Physics Laboratory, University of Washington, Seattle, WA, 98105) and William C. Moss** (Lawrence Livermore National Laboratory, Livermore, CA, 94551)

The light flash produced by a sonoluminescing bubble is extremely short lived, with a duration of less than 12 psec [M.J. Moran et al., NIMB, 96, 651 (1995)]. Although attempts have been made to explain the brevity of the flash there has been little attention given to the possibility of any residual "glow" that may be present. An afterglow would result, for example, from an expanding hot bubble that cools quickly as it expands. We have attempted to measure the afterglow produced by a sonoluminescing bubble using a high speed gated intensifier. The intensifier consists of a microchannel plate photomultiplier (MCPPMT) with a phosphor screen at the anode. The gate (applied by switching the high voltage at the first stage of the MCPPMT) is closed during the main flash, and opened immediately afterwards, within 5 nsec. Light incident of the photocathode of the MCPPMT activates the phosphor. A second PMT located behind the gated intensifier records the brightness of the phosphor emission. Results of the experiment will be presented. *Work supported by NSF. **Work performed under the auspices of the U. S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.

Number of words in abstract: 200
Suggested Special Session:
Technical Area: Physical Acoustics
(PACS) Subject Classification number(s): 43.25.Yw, 43.35.Ei, 78.60.Mq
Telephone number: 206-685-7654
Send notice to: T.J. Matula. 1013 NE 40th St., Seattle, WA 98105
Special facility: None
Method of Presentation: Prefer lecture